Manchester Urban Ponds Restoration Program

Spring 2022 Program Update

April 1, 2022

City of Manchester Environmental Protection Division
300 Winston Street
Manchester, NH 03103
(603) 665-6899 / www.manchesternh.gov/urbanponds
www.facebook.com/ManchesterUrbanPondsRestoration

Visit Us on the Web!

- ☐ Clean-Up Events
- ☐ Water Quality Data
- ☐ Publications

Spring Pond and Park Cleanups

This year begins our 23rd consecutive year of pond and park cleanups! While we absolutely love seeing old friends each year, we also love making new ones! Are you interested in getting outside in the fresh air, meeting like-minded individuals, and doing something good for your community? Not afraid of a little dirt, mud, or unusual finds? Then consider joining us! We try to make things fun by having a trash-themed scavenger hunt available for kids and you'll certainly want to be the recipient of the "Most Interesting or Unusual Piece of Trash" Award" and all of the accolades it brings!

Trash bags and latex gloves will be provided. Please wear rubber boots if you have them and bring yourself, a friend, a sense of community spirit, and a sense of humor! Our spring dates and locations are as follows:

- **Saturday April 23, 2022:** Black Brook / Blodget Park. Meet in parking lot on Front Street near Dunbarton Road.
- **Saturday April 30, 2022:** Stevens Pond / Stevens Park. Meet at boat ramp / kiosk on Bridge Street Extension.
- **Saturday May 7, 2022:** Nutts Pond / Precourt Park. Meet at kiosk in Precourt Park (Driving Park Road).

All cleanups are scheduled from 9:00 am – 11:00 am, although we tend to finish earlier. Please arrive no later than 8:55 am to sign in and receive an overview of the area and instructions. More information can be found on our facebook page and Cleanup Events webpage.

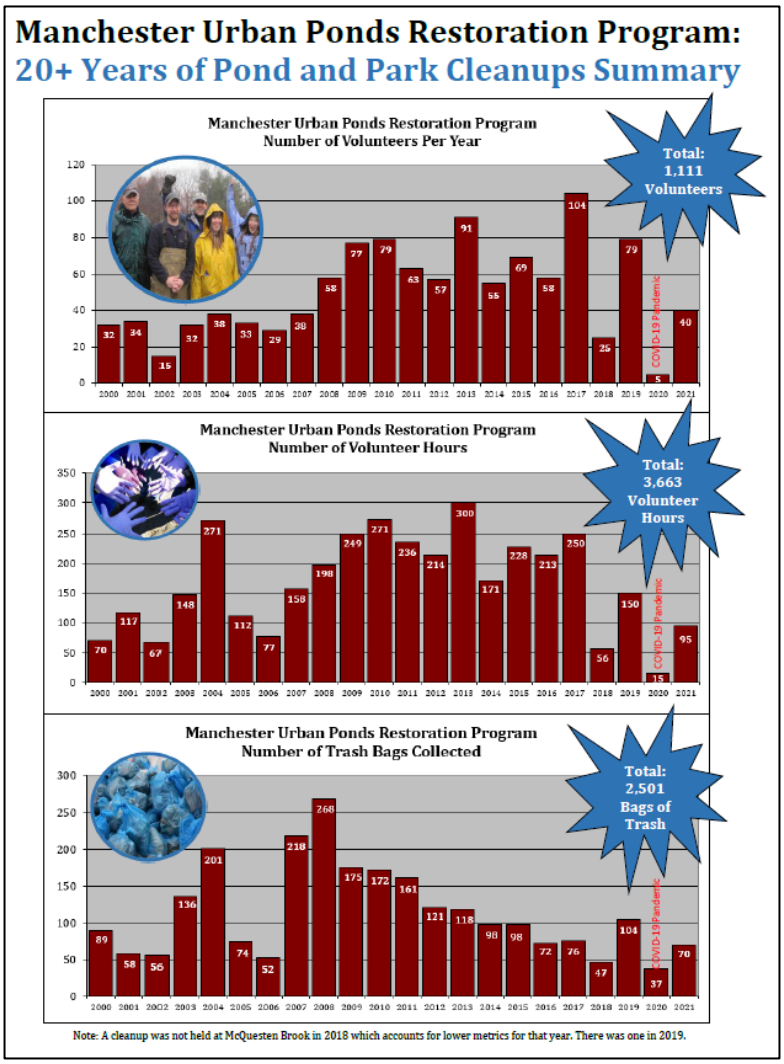
What was our **"Most Interesting or Unusual Piece of Trash"** in 2021? There were several, however, Martha Frechette won the accolade at Nutts Pond for finding a book entitled *"A Beginners Guide to Lock-Picking." Ha!*

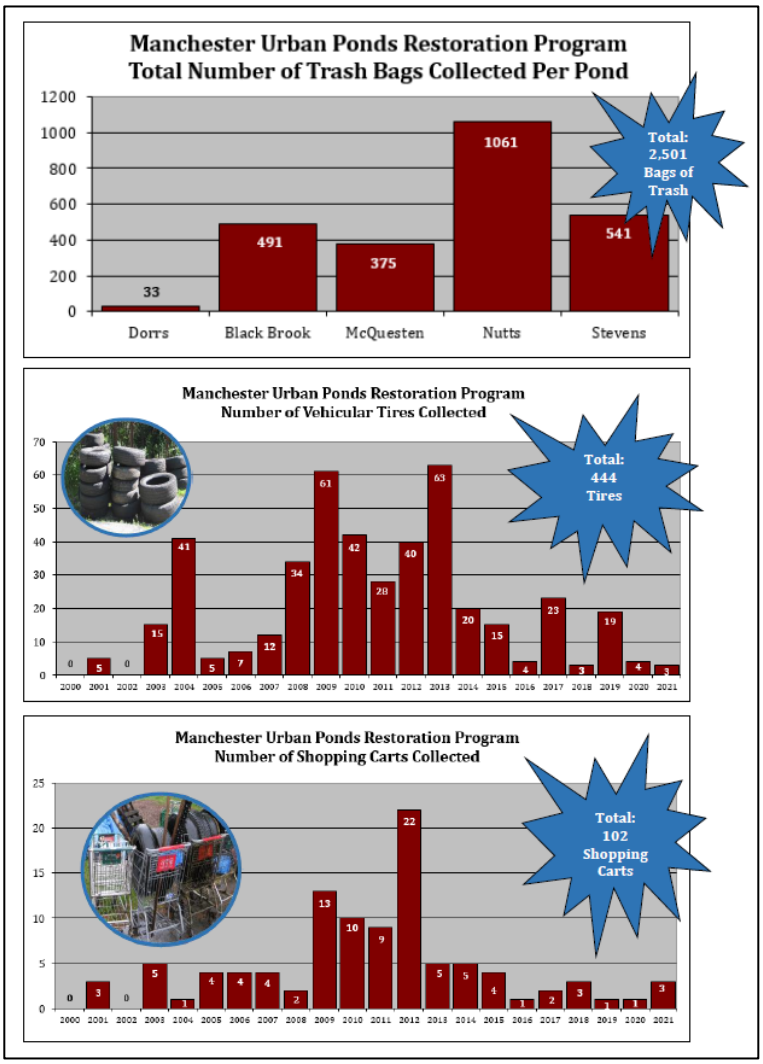
Thank You to Our 2021 Volunteers!

Anna Liz Bourassa, Ben Lundsted, Camden Telfer, Cole Riel, Dale McGrath, Dan Forget, David Lescarte, Dawn Currier, Diane Marcoux, Elias Ashooh, Fran Baldowski, Fred McNeill, Gavin Telfer, Gordon Wade, Henrick Lundsted, Jeff Marcoux, Jen Alberico, Jen Drociak, Jen Stepheneon, Johanna Nugent, Julian Noi, Kathy Black, Kevin Gordon, Kristina Drociak, Lexi Roux, Lou Saviano, Marianna Jean, Mark Zerbinopoulos, Martha Frechette, Meagan Boucher, Michael Wisniewski, Pat Spain, Reese Gordon, Ron Piecuch, Sara Caron, Sara Telfer, Shyla Culter, Simone Archer-Krauss, Tom Durant, and Tristan de Cande!

Did You Know?

Since 2000, the Manchester Urban Ponds Restoration Program has organized **122 clean-up events**. Over the past **22 seasons** of cleanups, **1,111 volunteers** have spent approximately **3,663 hours** collecting **2,501 bags of trash!** This does not include the items illegally "dumped" such as **shopping carts (102), tires (444)**, car batteries, other car parts, construction debris, and other items. In addition, the value of volunteer time spent at these clean-ups has amounted to over **$84,000** over these past 22 seasons





2021 Water Quality Data Summaries

In 2021, we returned to monitoring our waterbodies three times during the summer (June, July, and August). You can find our "All Ponds Water Quality Data Tables 2000-2021" as well as the individual water quality reports (produced by the New Hampshire Department of Environmental Services Volunteer Lake Assessment Program and Volunteer River Assessment Program) on our Water Quality Data webpage.

Manchester Urban Ponds Restoration Program
Water Quality Parameter Data Tables 2000 – 2021

Disclaimer: Please note that the **Chemical and Biological Parameter Explanations** discussed within the context of this document are extracted from the NH Volunteer Lake Assessment Program (VLAP) document of the same name which can be found at: http://des.nh.gov/organization/divisions/water/wmb/vlap/documents/parameters.pdf. Please also note that the tables below are **NOT** intended to assert specific water quality standard violations, but rather, are intended to provide the interested citizen with general categorical information for each water quality parameter's annual and historic averages. Lastly, the tables below are not intended to replace the valuable information included within the annual water quality reports. To view the annual VLAP reports for each waterbody, as well as the new regional VLAP reports, visit www.manchesternh.gov/urbanponds and click on "Publications".

Average Acid Neutralizing Capacity (ANC) Measurements in Milligrams per Liter (mg/L)

ANC (mg/l as $CaCO_3$)	Category
< 0	Acidified
0 - 2	Extremely Vulnerable
2.1 - 10	Moderately Vulnerable
10.1 - 25	Low Vulnerability
> 25	Not Vulnerable

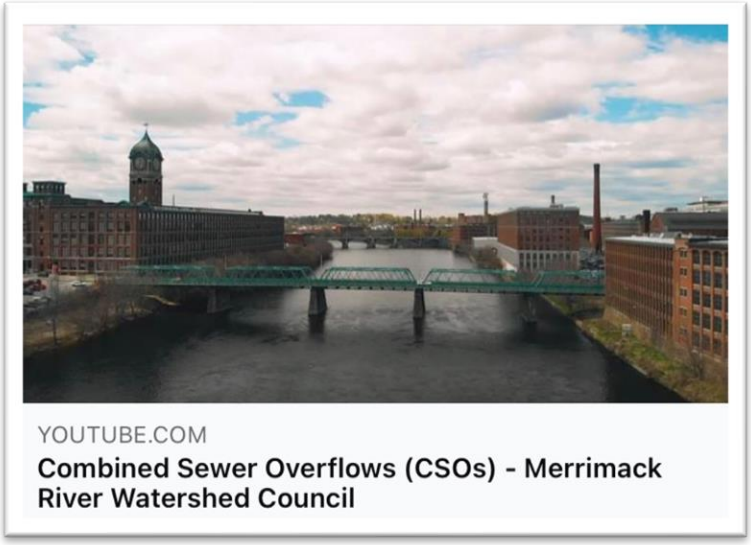
[1] Buffering capacity or Acid Neutralizing Capacity (ANC) describes the ability of a solution to resist changes in pH by neutralizing the acidic input to the lake. Historically, the waters of NH have had low ANC because of the prevalence of granite bedrock. The relatively low ANC values means that NH surface waters are vulnerable to the effects of acid precipitation. There is no numeric water quality standard for ANC, but values can typically be thought of in categories of vulnerability (to acid inputs).

Annual Average & Historical Average Epilimnion (Top Layer of Waterbody) ANC Measurements

Waterbody	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Hist. Avg.
Crystal Lake	18.1	17.3	20.2	18.5	14.4	16.3	17.1	16.7	15.2	16.1	16.2	17.0	14.8	18.7	18.1	Not Measured	20.1	26.0	19.8	19.7	21.0	20.6	**18.2**
Dorrs Pond	16.2	21.7	26.5	20.3	24.3	20.4	22.4	28.5	18.6	25.3	27.4	24.2	30.0	23.3	24.8	29.3	34.9	25.0	18.5	26.9	31.9	25.6	**24.8**
Maxwell Pond	6.8	9.8	6.7	6.4	5.5	5.6	6.1	9.7	5.9	Since the Maxwell Pond dam was removed (and Black Brook was restored) in 2009, ANC is no longer measured since the water is no longer impounded to create a "deep spot."													**6.9**
Nutts Pond	14.3	17.3	15.4	17.0	13.5	16.6	16.7	18.0	13.4	16.3	22.8	18.7	16.4	17.8	18.2	22.6	23.8	20.8	21.2	24.1	24.9	21.3	**18.7**
Pine Island Pond	17.1	20.1	21.2	14.6	11.5	16.6	13.8	17.6	20.2	12.2	21.6	18.0	16.9	17.8	18.5	30.0	34.4	27.0	21.1	29.1	35.8	18.5	**20.6**
Stevens Pond	34.2	31.0	30.8	29.2	29.1	28.7	30.3	35.2	25.0	27.9	38.1	33.4	28.1	30.7	30.9	33.3	37.0	31.2	29.3	36.3	36.5	32.4	**31.7**

Merrimack River Watershed Council Creates Short Video on Combined Sewer Overflows

In 2021, The Merrimack River Watershed Council created short video on Combined Sewer Outflows (CSOs). Don't know what CSOs are? Tune in to find out! Did you know that the Manchester Urban Ponds Restoration Program was created 22 years ago as one of seven initial Supplemental Environmental Projects in agreement with the U.S. Environmental Protection Agency and New Hampshire Department of Environmental Services to address CSOs and stormwater runoff? Over the past 22 years, the City of Manchester has invested $100 million on CSO abatement. In the next 20 year, the City of Manchester plans on investing another $230 million on CSO abatement. We encourage everyone to watch the video until the end to learn a few things we can ALL do on our properties and in our lives to help curb stormwater pollution, CSOs, and improve the water quality of our urban water bodies! **Additional information on the status of Manchester's CSO abatement projects can be found in the article on the next page.**



Tackling Merrimack River Water Quality Through Combined Sewer Overflow Abatement

The City of Manchester is investing over $335 million over the next 20 years to address Combined Sewer Overflows (CSOs) to improve Merrimack River water quality. The city has already invested $100 million over the past 20 years to mitigate CSO activations during Phase I of this program. Phase II of this program is one of the largest public works projects in the history of the city. Work has already started on a dozen different projects. Construction is ongoing at the wastewater treatment plant, will start this spring on Christian Brook on North Street, and this fall adjacent to Fisher Cats Stadium. The center piece of the Phase II program is the Cemetery Brook Tunnel Project.

Cemetery Brook is the main drainage basin for the city starting at Stevens Pond and discharging into the Merrimack River near Fisher Cats Stadium. A new drainage system will be constructed along the former railroad corridor from Mammoth Road southwest to Queen City Avenue to "separate" Cemetery Brook. The new drainage system will consist of an underground tunnel two miles long, 12-feet in diameter, and 30 to 80 feet deep. The tunnel will eliminate construction disruptions to residents, businesses, and traffic while significantly decreasing construction time.

In addition to the water quality improvements in the Merrimack River, these construction projects will be leveraged to provide urban revitalization to many areas of our inner city. In addition to the CSO work, other utilities such as Manchester Water Works and Liberty Gas will upgrade their utilities to serve future generations. Restoration efforts are fully leveraged as roads will be rebuilt along with new curbing, sidewalks, crosswalks, bike lanes and other amenities. The successful themes of water quality improvements, infrastructure upgrades, urban revitalization, and environmental justice to our inner city that were so successful during Phase I will continue throughout Phase II of the city's CSO mitigation program. For more information, please visit www.manchesternh.gov/Departments/Environmental-Protection/CSO

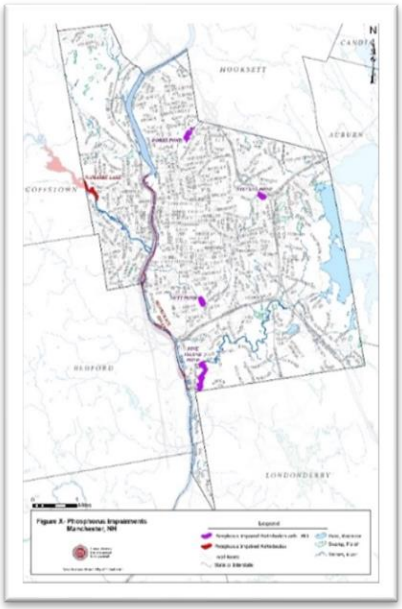
Mapping Stormwater Infrastructure and Creating Phosphorus Control Plans to Mitigate Water Pollution

As part of its stormwater management program under the Environmental Protection Agency's 2017 National Pollutant Discharge and Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit, the City of Manchester is undertaking a variety of projects with a goal of improving water quality of the City's surface waters. Some recent highlights are provided below:

Drainage Infrastructure Mapping, Inspection, and Maintenance: The City of Manchester is implementing a comprehensive field mapping, inspection, and maintenance program of stormwater infrastructure, including catch basins, outfalls, drainage channels, culverts, and structural stormwater best management practices (BMPs). The program uses an electronic GIS platform to accurately map drainage infrastructure and track inspection and maintenance activities. The same platform is used by the City's consultants, staff, and outside contractors/vendors to maximize data collection efforts as part of other program and to accurately and consistently track information each year.

The collected information is used by the City to prioritize areas for maintenance to minimize the discharge of sediment from catch basins and drainage channels into the City's surface waters, and to allow for the safe passage of stormwater flow by upgrading and rebuilding Manchester's aging stormwater system.

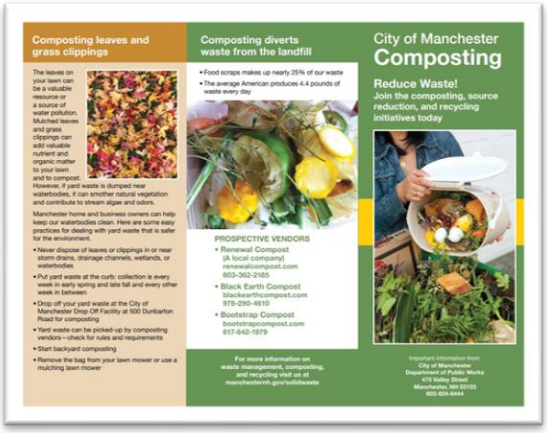
Phosphorus Control Plan: The City of Manchester is preparing a phosphorus control plan to address the discharge of phosphorus from its MS4 to phosphorus-impaired waterbodies, including Dorrs Pond, Nutts Pond, Namaske Lake (an impoundment on the Piscataquog River), the Merrimack River, Pine Island Pond, and Stevens Pond.



The plan will lay out an approach for reducing phosphorus inputs to these waterbodies, accounting for and building upon previous City water quality restoration efforts under the Urban Pond Restoration Program. A combination of non-structural and structural measures will be evaluated and developed where appropriate, focusing on municipally owned and operated properties and right of ways, with implementation occurring over the next 11 years.

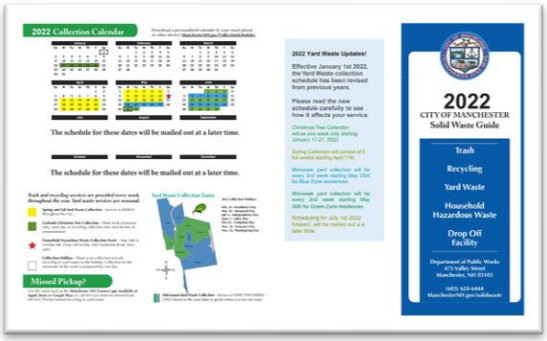
Waste and Recycling Updates

Composting: In 2021, the City of Manchester Department of Public Works created an opportunity for residents (who either cannot or do not wish to backyard compost) to partner outside vendors to compost their food scraps. One of these vendors is Renewal Garden and Compost owned and operated by Manchester residents Lou Saviano and Meagan Boucher. For more information on backyard composting and composting with a vendor, visit City's Trash and Recycling webpage.



Household Hazardous Waste: This year's free Household Hazardous Waste collection dates are Saturday May 14th and Saturday October 8th. For more information, please visit the City's Trash and Recycling webpage or the City's 2022 Solid Waste Guide.

Recycling: On January 19, 2022, Mayor Joyce Craig and the Department of Public Works announced the City of Manchester has partnered with Rehrig Pacific to roll out new recycling carts made from ocean-bound recycled plastic. Manchester is only the second city in the nation to utilize ocean-bound recycled plastic in their recycling carts. The OceanCore carts will replace broken or new carts for Manchester residents across the city and are made from a blend of 40 percent post-consumer recycled material, 10 percent of which is recycled ocean-bound plastic found in and near lakes, beaches, and waterways on the way to the ocean. Utilizing OceanCore carts is one of many ways the City is continuing to invest in environmentally-friendly practices and has made significant progress in recent years. Need a cart? Visit the City's Trash and Recycling webpage.



Informational Kiosks Posted with New Materials

In 2021, we re-posted all 10 of our informational kiosks with updated and new materials. In particular, we worked with staff at the City of Manchester Environmental Protection Division to create a series of stormwater education fact sheets. These included "Green Grass and Clean Water," "Rake It or Leave It? What to Do with Your Leaves and Grass Clippings," "Scoop the Poop" to Protect Manchester's Waterways," "Watersheds and the Basics of Stormwater," and "What You Can Do to Reduce Stormwater Runoff & Pollution." Not only are these new fact sheets on our kiosks, but they can also be found on our Publications webpage.

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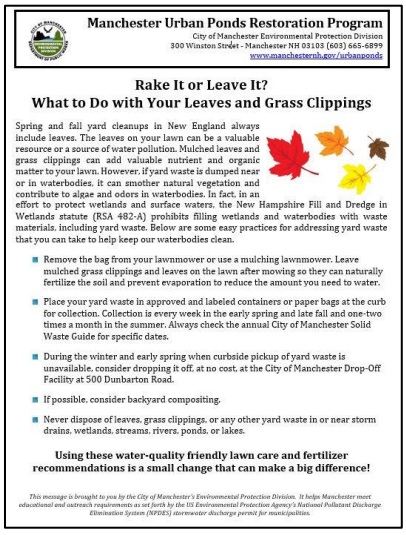
Green Grass and Clean Water

Many of us value having finely-manicured lawns. However, some lawn care practices can create water quality issues. While plants need nutrients to grow, excess nutrients, such as and phosphorus and nitrogen found in fertilizers, can run off our properties when it rains and cause problems in local waterbodies. Too many nutrients in our water can cause algal and cyanobacteria blooms that can cloud water and lower dissolved oxygen. Below are some easy practices for creating and maintaining a truly healthy lawn that looks great and is safer for the environment!

- Test your soil and only apply fertilizer only if necessary.
- Apply fertilizer sparingly and ensure proper application.
- Apply fertilizer in the spring and early fall.
- Choose a fertilizer with low or no phosphorus unless a soil test indicates otherwise.
- Choose a slow-release fertilizer whenever possible.
- Raise and keep your mower deck at a height of 3" or more.
- Leave mulched grass clippings on the lawn after mowing so they can naturally fertilize the soil and prevent evaporation to reduce the amount you need to water.

Using water-quality friendly lawn care and fertilizer recommendations are a small change that can make a big difference to Manchester's waterbodies!

This message is brought to you by the City of Manchester's Environmental Protection Division. It helps Manchester meet educational and outreach requirements as set forth by the US Environmental Protection Agency's National Pollutant Discharge Elimination System (NPDES) stormwater discharge permit for municipalities.



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Rake It or Leave It?
What to Do with Your Leaves and Grass Clippings

Spring and fall yard cleanups in New England always include leaves. The leaves on your lawn can be a valuable resource or a source of water pollution. Mulched leaves and grass clippings can add valuable nutrient and organic matter to your lawn. However, if yard waste is dumped near or in waterbodies, it can smother natural vegetation and contribute to algae and odors in waterbodies. In fact, in an effort to protect wetlands and surface waters, the New Hampshire Fill and Dredge in Wetlands statute (RSA 482-A) prohibits filling wetlands and waterbodies with waste materials, including yard waste. Below are some easy practices for addressing yard waste that you can take to help keep our waterbodies clean.

- Remove the bag from your lawnmower or use a mulching lawnmower. Leave mulched grass clippings and leaves on the lawn after mowing so they can naturally fertilize the soil and prevent evaporation to reduce the amount you need to water.
- Place your yard waste in approved and labeled containers or paper bags at the curb for collection. Collection is every week in the early spring and late fall and one-two times a month in the summer. Always check the annual City of Manchester Solid Waste Guide for specific dates.
- During the winter and early spring when curbside pickup of yard waste is unavailable, consider dropping it off, at no cost, at the City of Manchester Drop-Off Facility at 500 Dunbarton Road.
- If possible, consider backyard composting.
- Never dispose of leaves, grass clippings, or any other yard waste in or near storm drains, wetlands, streams, rivers, ponds, or lakes.

Using these water-quality friendly lawn care and fertilizer recommendations is a small change that can make a big difference!

This message is brought to you by the City of Manchester's Environmental Protection Division. It helps Manchester meet educational and outreach requirements as set forth by the US Environmental Protection Agency's National Pollutant Discharge Elimination System (NPDES) stormwater discharge permit for municipalities.

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"Scoop the Poop" to Protect Manchester's Waterways

We certainly all love our dogs! However, pet waste is a contributing source of stormwater pollution in streams, rivers, ponds, and lakes. Rain and melting snow flowing across our yards, dog parks, trails, driveways, and roads, picks up pet waste along the way and deposits it in our local waterbodies. Pet waste carries harmful bacteria that can make our waterbodies unsafe for swimming and can make us sick if accidentally ingested.

Please help keep our waterbodies clean. In accordance with Manchester's Code of Ordinances (§90.04), always carry a plastic bag or other collection means with you when you walk your dog and be sure to pick up pet waste and properly dispose of it in a trash can. Citations and penalties between $100 (first offense) and $200 (second offense) can be issued for failing to meet these requirements.

Take the Pledge to Scoop the Poop!

Visit https://stateofoureestuaries.org/everydrop/petpledge/ or just scan the QR code below to let us know you are making a difference by pledging to pick up after your pet.

Five Small Changes that Make a Big Difference:

- Always carry a plastic bag when you walk your dog.
- Always pick up pet waste.
- Always dispose of pet waste in a trash can.
- Never place bagged or unbagged pet waste in a storm drain.
- Take the Pledge and tell your city you're making a difference!

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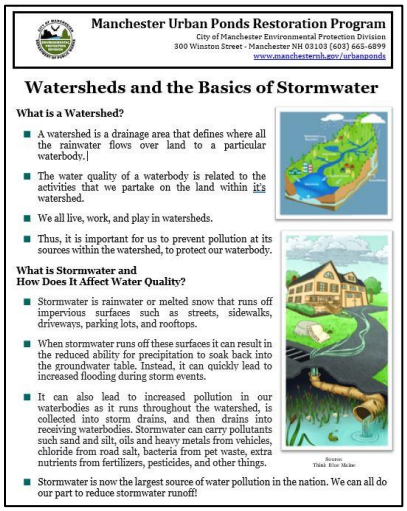

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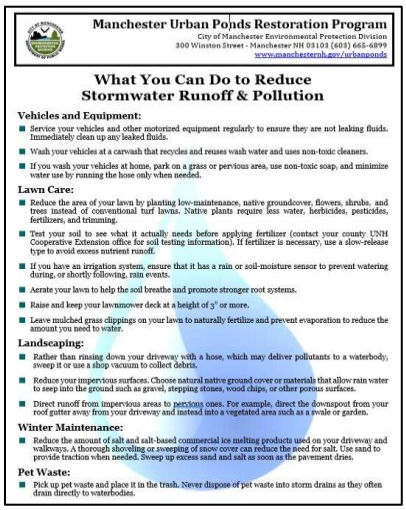
Watersheds and the Basics of Stormwater

What is a Watershed?

- A watershed is a drainage area that defines where all the rainwater flows over land to a particular waterbody.
- The water quality of a waterbody is related to the activities that we partake on the land within it's watershed.
- We all live, work, and play in watersheds.
- Thus, it is important for us to prevent pollution at its sources within the watershed, to protect our waterbody.

What is Stormwater and How Does It Affect Water Quality?

- Stormwater is rainwater or melted snow that runs off impervious surfaces such as streets, sidewalks, driveways, parking lots, and rooftops.
- When stormwater runs off these surfaces it can result in the reduced ability for precipitation to soak back into the groundwater table. Instead, it can quickly lead to increased flooding during storm events.
- It can also lead to increased pollution in our waterbodies as it runs throughout the watershed, is collected into storm drains, and then drains into receiving waterbodies. Stormwater can carry pollutants such sand and silt, oils and heavy metals from vehicles, chloride from road salt, bacteria from pet waste, extra nutrients from fertilizers, pesticides, and other things.
- Stormwater is now the largest source of water pollution in the nation. We can all do our part to reduce stormwater runoff!



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What You Can Do to Reduce Stormwater Runoff & Pollution

Vehicles and Equipment:

- Service your vehicles and other motorized equipment regularly to ensure they are not leaking fluids. Immediately clean up any leaked fluids.
- Wash your vehicles at a carwash that recycles and reuses wash water and uses non-toxic cleaners.
- If you wash your vehicles at home, park on a grass or pervious area, use non-toxic soap, and minimize water use by running the hose only when needed.

Lawn Care:

- Reduce the area of your lawn by planting low-maintenance, native groundcover, flowers, shrubs, and trees instead of conventional turf lawns. Native plants require less water, herbicides, pesticides, fertilizers, and trimming.
- Test your soil to see what it actually needs before applying fertilizer (contact your county UNH Cooperative Extension office for soil testing information). If fertilizer is necessary, use a slow-release type to avoid excess nutrient runoff.
- If you have an irrigation system, ensure that it has a rain or soil-moisture sensor to prevent watering during, or shortly following, rain events.
- Aerate your lawn to help the soil breathe and promote stronger root systems.
- Raise and keep your lawnmower deck at a height of 3" or more.
- Leave mulched grass clippings on your lawn to naturally fertilize and prevent evaporation to reduce the amount you need to water.

Landscaping:

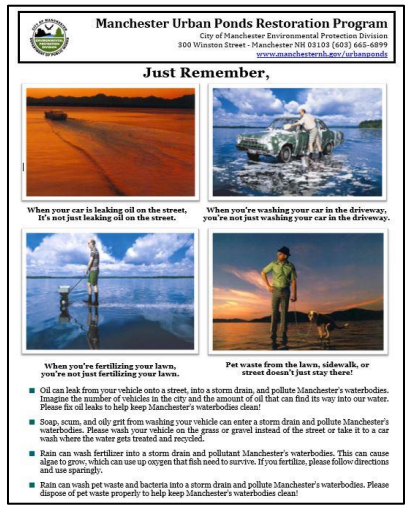
- Rather than rinsing down your driveway with a hose, which may deliver pollutants to a waterbody, sweep it or use a shop vacuum to collect debris.
- Reduce your impervious surfaces. Choose natural native ground cover or materials that allow rain water to seep into the ground such as gravel, stepping stones, wood chips, or other porous surfaces.
- Direct runoff from impervious areas to pervious ones. For example, direct the downspout from your roof gutter away from your driveway and instead into a vegetated area such as a swale or garden.

Winter Maintenance:

- Reduce the amount of salt and salt-based commercial ice melting products used on your driveway and walkways. A thorough shoveling or sweeping of snow cover can reduce the need for salt. Use sand to provide traction when needed. Sweep up excess sand and salt as soon as the pavement dries.

Pet Waste:

- Pick up pet waste and place it in the trash. Never dispose of pet waste into storm drains as they often drain directly to waterbodies.



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Just Remember,

When your car is leaking oil on the street, it's not just leaking oil on the street.

When you're washing your car in the driveway, you're not just washing your car in the driveway.

When you're fertilizing your lawn, you're not just fertilizing your lawn.

Pet waste from the lawn, sidewalk, or street doesn't just stay there!

- Oil can leak from your vehicle onto a street, into a storm drain, and pollute Manchester's waterbodies. Imagine the number of vehicles in the city and the amount of oil that can find its way into our water. Please fix oil leaks to help keep Manchester's waterbodies clean!
- Soap, scum, and oily grit from washing your vehicle can enter a storm drain and pollute Manchester's waterbodies. Please wash your vehicle on the grass or gravel instead of the street or take it to a car wash where the water gets treated and recycled.
- Rain can wash fertilizer into a storm drain and pollutant Manchester's waterbodies. This can cause algae to grow, which can use up oxygen that fish need to survive. If you fertilize, please follow directions and use sparingly.
- Rain can wash pet waste and bacteria into a storm drain and pollute Manchester's waterbodies. Please dispose of pet waste properly to help keep Manchester's waterbodies clean!

Merrill Lewis Receives
Volunteer Limnologist Secchi Disk Award

On May 17, 2021, Merrill Lewis, Pine Island Pond volunteer, was awarded a belated 2019 Volunteer Limnologist "Secchi Disk Award" from the New Hampshire Department of Environmental Services Volunteer Lake Assessment Program (VLAP). This was supposed to have been awarded in person, but due to the global pandemic was belated and awarded via a virtual awards ceremony.

Merrill began monitoring Pine Island Pond as a volunteer with VLAP beginning in the year 2000, when the Manchester Urban Ponds Restoration Program began. Merrill monitored Pine Island Pond, largely as a "one-man show" until 2018, when he passed the "baton" (YSI 550A, secchi disk, and Viewscope) to his successor, Courtney Moore. Thus, Merrill was involved with VLAP for 19 seasons of water quality and vegetation monitoring.

Merrill initiated the Pine Island Pond Environmental Society (PIPES), bringing his neighbors, and Pine Island Pond abutters together relative to issues such as water quality monitoring, invasive species, non-point source pollution / stormwater runoff, point-source pollution, access, and more. These issues affect everyone who lives on the pond and the pond itself.

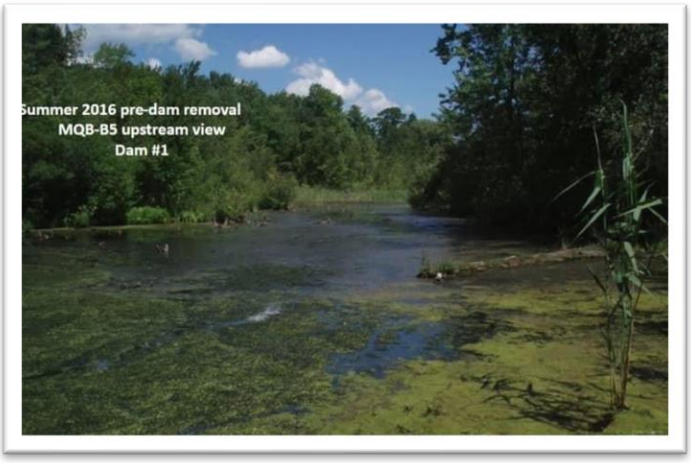
Merrill was also instrumental in finding the variable milfoil infestation at Pine Island Pond and involved in meetings and review of the management plan. Merrill performed informal surveys of the pond but also more formal weed-watcher surveys according to protocols.

In summary, Merrill was imperative in supplementing monitoring activities as a volunteer for VLAP, creating the Pine Island Pond Environmental Society, holding annual meetings of PIPES members, neighbors, abutters, and interested parties, creating a hard-copy mailing list and an email list for information dissemination, volunteering as a volunteer Weed Watcher, reporting and documenting water loss in the pond due to an issue with the dam (the pond actually drained), reporting the initial variable milfoil infestation, and becoming involved with monitoring and the milfoil management plan, as well as other tasks.

A video of the Urban Ponds Restoration Program Coordinator congratulating Merrill can be found on our facebook page. Congratulations, Merrill!

Michele Tremblay Receives Gulf of Maine Council Longard Award

Michele Tremblay, President of the Board of Directors of the New Hampshire Rivers Council, was the recipient of the much-coveted Gulf of Maine Council Longard Award for outstanding, individual, volunteer service and programs dedicated to environmental protection and sustainability within the Gulf of Maine during a virtual awards ceremony on December 9, 2021.



After a century of indifference and pollution, McQuesten Brook in Bedford and Manchester, NH had devolved into an urban dumping site. NH Fish and Game asked if efforts could be undertaken to protect an isolated population of native Brook Trout there. The unpaid President of the New Hampshire Rivers Council, Michele Tremblay, accepted the challenge. Over the next seven years, Michele orchestrated development of the McQuesten Brook Watershed Restoration Plan enlisting partners and funding sources ranging from USEPA Section 319 Watershed Assistance Grants, state Aquatic Resource Mitigation Program, and municipal funds, along with in-kind services such as City of Manchester Public Works machinery and operators, Capital Improvement funds and purchase of property by the Town of Bedford, and countless hours of volunteer labor inspired by Michele to engage in this watershed restoration and naturalization. The project ultimately required the removal of four dams, eliminated one stream crossing, a second stream crossing upgraded from a 36-inch culvert to fourteen-foot bridge-span, stream daylighting project, confirmation monitoring sufficient for a pair of de-listings from the 303(d) list of impaired waters, and justification for two NPS Success Stories.

For her selfless commitment and lasting environmental and public health results, Michele was recognized by the Gulf of Maine Council as an unsurpassed environmental advocate leading science-based solutions when faced with the impossible and for her efforts that enabled so many to engage on efforts to restore an urban stream habitat in Manchester and Bedford, New Hampshire.

Manchester Urban Ponds Restoration Program Background

The Manchester Urban Ponds Restoration Program was established in the year 2000. For the first five years (2000-2005), the program was a component of the overall "Supplemental Environmental Projects Plan" (SEPP) which was an agreement between the City of Manchester, New Hampshire Department of Environmental Services, and the U.S. Environmental Protection Agency to address combined sewers in the city. During this time, and under the SEPP agreement, the program had a full-time coordinator who worked in the Planning Department under the guidance of the Manchester Conservation Commission. The initial tasks of the program were to evaluate and monitor seven waterbodies in Manchester for their restoration potential.

With the end of the formal SEPP agreement, from 2006 to the present, the program has continued as a partnership between several city departments which include, but have not been limited to, the Environmental Protection Division; Public Works Department; and the Parks, Recreation, and Cemetery Department. The program continues to work closely with the New Hampshire Department of Environmental Services. It also has a part-time, seasonal coordinator and has partnered with hundreds of volunteers.

Goal and Objectives: The original goal of the program was to "return the ponds to their historic uses" (such as boating, fishing, and swimming) with the following objectives: 1) Promote public awareness, education, and stewardship; 2) Reduce pollutant loading and nutrient inputs to improve water quality; 3) Maintain or enhance biological diversity; 4) Provide improved recreational uses at each pond.

Projects and Activities: Since 2000, specific restoration projects to meet the program's goals have been and continue to be identified, funded, and completed. While the program has been involved in several projects over the years, it continues to coordinate the following activities: Annual maintenance of 10 informational kiosks; Annual e-newsletter; Annual spring pond and park cleanups; Annual water quality sampling and data analysis; Publication updates; Social media and website updates.

Accolades and Recognition: In May of 2011, the program received an EPA "Environmental Merit Award." In 2018, several dedicated, long-time volunteers were formally recognized by the Mayor and Board of Aldermen for their many years of service at pond and park cleanups.

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